

Application No.: 10/667,522

REMARKS

The above amendments and these remarks are responsive to the Office Action issued on June 5, 2006. By this response, claims 1; 13, 17, 19 and 29 are amended, claim 14 is cancelled without prejudice, and claims 30 and 31 are newly presented. No new matter is added. Claims 1-10 and 12-31 are now active for examination.

The Office Action dated June 5, 2006 rejected claims 1-9, 12, 17-25 and 29 under 35 U.S.C. §103(a) as being unpatentable over Hendrix (U.S. Patent No. 6,115,927) in view of Jackson (U.S. Patent No. 5,724,743) and in view of Liss et al. (U.S. Patent No. 4,614,866). Claim 10 was rejected under 35 U.S.C. §103(a) as being unpatentable over Hendrix, Jackson and Liss, and further in view of Stam et al. (U.S. Patent No. 5,923,027). Claims 13-16 and 26-28 were rejected under 35 U.S.C. §103(a) as being unpatentable over Hodge (U.S. Patent No. 5,760,938) in view of Hendrix. The Office Action also objected to claim 14.

Applicants respectfully submit that the claim rejections are overcome and the objection is addressed in view of the amendments and/or remarks presented herein.

The Claim Objection and Rejection of Claim 14 Are Moot

By this Response, claim 14 is cancelled without prejudice. Accordingly, the objection to, the rejection of, claim 14 are now moot.

The Obviousness Rejection based on Hendrix, Jackson and Liss Is Overcome

Legal precedent is well developed on the subject of obviousness in the application of a rejection under 35 U.S.C. §103. It is incumbent upon the examiner to factually support a conclusion of obviousness. *In re Mayne*, 104 F.3d 1339, 41 USPQ2d 1451 (Fed. Cir. 1997); *In*

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re Oetiker, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). The examiner must provide a reason why one having ordinary skill in the art would have been led to modify a particular prior art reference in a particular manner to arrive at a particular claimed invention; *Ecolochem Inc. v. Southern California Edison, Co.* 227 F.3d 361, 56 USPQ2d 1065 (Fed. Cir. 2000); *In re Rouffet*, 149 F.3d 1350, 47 USPQ2d 1453 (Fed. Cir. 1998). *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 227 USPQ 657 (Fed. Cir. 1985); *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983); *In re Warner*, 379 F.2d 1011, 154 USPQ 173 (CCPA 1967).

In order to establish the requisite motivation, "clear and particular" factual findings must be made as to a specific understanding or specific technological principle which would have realistically compelled one having ordinary skill in the art to modify a particular reference to arrive at the claimed invention, based upon facts, not generalizations. *Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 57 UPSQ2d 1161 (Fed. Cir. 2000); *Ecolochem Inc. v. Southern California Edison, Co.* 227 F.3d 361, 56 USPQ2d 1065 (Fed. Cir. 2000); *In re Kotzab*, 217 F.3d 1365, 55 USPQ 1313 (Fed. Cir. 2000); *In re Dembiczaik*, 175 F.3d 994, 50 USPQ2d 1614 (Fed. Cir. 1999). Whether the prior art may be capable of modification, and what may or may not be known in general, are not determinative per se to establish the requisite realistic motivation for obviousness; see *In re Deuel*, 51 F.3d 1552, 34 USPQ2d 1210 (Fed. Cir. 1995). The question is not what one having ordinary skill in the art could or could not do, but, rather, why would one having ordinary skill in the art have been realistically impelled by the prior art teachings to deviate from the prior art process described in the background of the present application to arrive at the claimed invention. *Gentry Gallery v. Berkline*, 134 F.3d 1473, 45 USPQ2d 1498 (Fed. Cir. 1998); *In re Fritch*, 972 F.2d 1260, 23 USPQ2d 1780 (Fed. Cir. 1992). Reliance upon a problem

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with the prior art that is only recognized and disclosed by the present application for a basis of motivation under 35 U.S.C. § 103 is no more than inappropriate hindsight reconstruction using appellant's disclosed invention as a guide. *In re Warner*, 379 F.2d 1011, 154 USPQ 173 (CCPA 1967).

Claims 1-9, 12, 17-25 and 29 were rejected as being unpatentable over Hendrix in view of Jackson and Liss. It is respectfully submitted that the record has not met the established criteria for a determination of obviousness under 35 U.S.C. § 103.

Claim 1, as amended, describes a three-dimensional camera based position determination system, such as an aligner, using an invisible light source to “shine” invisible light onto an optically scannable target, such that the invisible light is retro-reflected to an image sensing device, such as a camera, to form an image of the target. A data processing device is provided to determine the orientation of the target object based on the generated target image. Claim 17 is a means-plus-function claim including descriptions substantially similar to those of claim 1.

There is no sufficient motivation to specifically modify Hendrix with Jackson and Liss to meet every limitation of claims 1 and 14.

Hendrix was cited for its alleged use of camera 16 for detecting invisible light from electromagnetic radiation emitters 14. See Fig. 2 and Col. 5, Ins. 5-7 of Hendrix. As disclosed by Hendrix, electromagnetic radiation emitters 14 and camera 16 need to work in pair such that the electromagnetic radiations emitted by the electromagnetic radiation emitters 14 are directly detected by camera 16. In other words, the invisible emitters 14 in Hendrix work as “targets” to be viewed by camera 16. Notably, Hendrix’s invisible emitters 14 are not used to “shine” a target as described in the claims, and camera 16 does not receive any retro-reflected invisible

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light, and form any image of any target based on the retro-reflected invisible light, as described in the claims.

In rendering the obviousness rejection, the Office Action contended that it would have been obvious to modify Hendrix by including an optically scannable target, as taught in Jackson, into Hendrix's system. As Hendrix's invisible emitters 14 is used as a "target" being viewed by camera 16, the use of the invisible emitter 14 and scannable target in Hendrix's system are mutually exclusive. The only viable construction to use the scannable target in Hendrix's system is to replace the invisible emitters 14, and have the scannable target and camera 16 work in pair. Under this construction, the scannable target is viewed by camera 16 directly. The resultant system as contended by the Office Action does not "shine" any invisible light onto an optically scannable target. The camera 16 also fails to form an image of the target based on the invisible light retro-reflected to the camera 16.

Even if the invisible light emitters 14 and the scannable target can be coexistent in Hendrix's system, both the scannable target and the invisible light emitters 14 need to be placed on the opposite side to the camera 16, to be directly "viewed" by camera 16, as taught by Hendrix and Jackson. Accordingly, the combination of Hendrix and Jackson, even under such expanding reading, still fails to provide the prerequisite teaching to illuminate an optically scannable target using invisible light, such that the invisible light is retro-reflected to an image sensing device to form an image of the target, as described by the claims. Therefore, the combination of Jackson and Hendrix does not meet every limitation of claims 1 and 17.

The other cited document, Liss, was cited for its purported disclosure of a visual indicator to indicate whether low power laser of a therapeutic device is working properly (see col. 4, ln. 28-32 of Liss), and does not alleviate the deficiencies of the combination of Hendrix and Jackson.

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Accordingly, claims 1 and 14 are patentable over the combination of Hendrix, Jackson and Liss.

Favorable reconsideration of claims 1 and 14 is respectfully solicited.

Claims 2-10, 12, 19-25 and 29, directly or indirectly, depend on claims 1 and 14, respectively. Since claims 1 and 14 are in condition for allowance, claims 2-10, 12, 19-25 and 29 also are in condition for allowance by virtue of their dependencies.

Applicants note that another document of record, Butler (US Patent No. 4,718,759), also shares the same deficiencies as Hendrix. Butler describes wheel alignment heads using invisible light sources (infrared LED 29A) to provide track reference. See Figs. 1, 2 and 5; and col. 7, Ins. 25-60 of Butler. Again, like Hendrix, the use of invisible light emitter in Butler is to emit light for direct detections by sensors, to determine whether the emitter is in a specific detection range. Butler's invisible light, however, is not used to "illuminate" a target so that a camera and computer can obtain "images" of the target patterns based on retro-reflected light, for determining an alignment parameter of a wheel. In other words, Butler does not "form an image of the target," as described in the claims. No other document provides the specific teaching to illuminate an optically scannable target using invisible light, such that the invisible light is retro-reflected to an image sensing device to form an image of the target, as described in the claims.

The Obviousness Rejection based on Hendrix, Jackson, Liss and Stam Is Overcome

Claim 10 indirectly depends on claim 1 and incorporates every limitation thereof. As discussed earlier, the combination of Hendrix, Jackson and Liss cannot be properly combined to meet every limitation of claim 1. The Stam does not alleviate the deficiencies of these other documents. Accordingly, claim 10 is patentable.

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The Obviousness Rejection based on Hodge and Hendrix Is Overcome

Claims 13-16 and 26-28 were rejected as being unpatentable over Hodge in view of Hendrix. The obviousness rejection is respectfully overcome because the cited documents cannot support a prima facie case of obviousness.

Independent claim 13 describes providing an indicator to show whether a received image, formed by retro-reflected invisible light from a target, is acceptable. Hodge merely describes a conventional aligner without using invisible emitters and cameras to form images of targets. As discussed earlier relative to claim 1, Hendrix, fails to disclose using invisible lights to shine a target and form an image of the target based on the retro-reflected invisible light from the target. Therefore, Hodge and Hendrix, even if combined, fail to disclose every limitation of claim 13. The obviousness rejection is overcome.

Independent claim 26 describes an aligner having an indicator for indicating a direction or a manner by which an object under test should be moved relative to cameras. Claims 27 and 28 includes features similar to claim 26. In rejecting claims 13-16 and 26-28, the Office Action alleged that the combination of Hodge and Hendrix discloses the claimed features. Applicants respectfully disagree.

According to the Examiner's construction, Hendrix discloses using a computer screen to show whether an image capture process is acceptable. See page 9, second paragraph of the Office Action and col. 9, ln. 60-col. 10, ln. 18 of Hendrix. However, the computer screen at most, warns that an image is not acceptable, but does not provide any indication on how, or in what manner, that an object should be moved. Hendrix does not indicate a direction by which an object under test should be moved relative to cameras, as described in claims 26-28. Hodge does

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not alleviate these deficiencies. Therefore, the combination of Hodge and Hendrix does not meet every limitation of claims 26-28. The obviousness rejection is overcome.

New Claims 30 and 31 Are Patentable

New claims 30 and 31 depend on claim 1. As discussed earlier, claim 1 is patentable. Accordingly, claims 30 and 31 also are patentable by virtue of their dependencies.

Conclusion

For the reasons given above, Applicants believe that this application is in condition for allowance, and request that the Examiner give the application favorable reconsideration and permit it to issue as a patent. If the Examiner believes that the application can be put in even better condition for allowance, the Examiner is invited to contact Applicants' representatives listed below.

(2) Independent claims 13 and 26-28

Claim 13 describes providing an indicator to show whether a received image in a 3-D aligner is acceptable. Claim 26 describes an aligner having an indicator for indicating a direction by which an object under test should be moved relative to cameras. Claims 27 and 28 includes features similar to claim 26. The indicators in these claims are part of a camera/light subsystem. In rejecting claims 13-16 and 26-28, the Office Action alleged that the combination of Hodge and Hendrix discloses the claimed features. Applicants respectfully disagree.

According to the Examiner's construction, Hendrix discloses using a computer screen to show whether an image capture process is acceptable. See page 9, second paragraph of the Office Action and col. 9, ln. 60-col. 10, ln. 18 of Hendrix. However, the computer screen is not part of the camera/light subsystem, as described in the claims. Furthermore, contrary to the

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Examiner's assertion, Hendrix does not indicate a direction by which an object under test should be moved relative to cameras, as described in claims 26-28.

Conclusion

For the reasons given above, Applicants believe that this application is conditioned for allowance and Applicants request that the Examiner give the application favorable reconsideration and permit it to issue as a patent. However, if the Examiner believes that the application can be put in even better condition for allowance, the Examiner is invited to contact Applicant's representative listed below.

Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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